

Publication

**EP 0810646 A3 19980114 (EN)**

Application

**EP 97105449 A 19970402**

Priority

US 64852696 A 19960513

Abstract (en)

[origin: EP0810646A2] A heterojunction bipolar transistor with a vertically integrated profile includes a substrate layer, a collector contact layer, a collector layer, a base layer and an emitter layer, formed from AlGaAs, etched to form an emitter mesa leaving a relatively thin passivating layer, adjacent the emitter mesa. The base metal contacts are formed on the passivating layer, resulting in a wider bandgap, thus minimizing surface recombination velocity at the emitter-base junction and increasing the overall gain (  $\beta$  ) of the device. The base metal contacts are formed by evaporating a p-ohmic metal onto the n-type passivation layer. The p-ohmic contacts are annealed, resulting in p-type metal diffusion through the passivating layer and reaction with the base layer, resulting in ohmic contacts. <IMAGE>

IPC 1-7

**H01L 21/331**; **H01L 29/737**

IPC 8 full level

**H01L 29/73** (2006.01); **H01L 21/331** (2006.01); **H01L 29/205** (2006.01); **H01L 29/737** (2006.01)

CPC (source: EP KR US)

**H01L 27/02** (2013.01 - KR); **H01L 29/66318** (2013.01 - EP US); **H01L 29/7371** (2013.01 - EP US); **H01L 29/20** (2013.01 - EP)

Citation (search report)

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Designated contracting state (EPC)

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DOCDB simple family (publication)

**EP 0810646 A2 19971203**; **EP 0810646 A3 19980114**; JP 2937944 B2 19990823; JP H1050723 A 19980220; KR 100254715 B1 20000501; KR 970077614 A 19971212; US 5840612 A 19981124

DOCDB simple family (application)

**EP 97105449 A 19970402**; JP 12198497 A 19970513; KR 19970018194 A 19970512; US 91138897 A 19970814